NIMA MOHSENI

Birth: 18 Jan 1995

nimamohseni.w@gmail.com ⋄ (+98)9030676150

No. 9 (Apt. No.4), Doroudi lane, Habibiollahi St., Azadi St., Tehran, Iran

EDUCATION

Bu-Ali Sina University *September 2019 -*

- M.S. student in Electrical Engineering - Control Systems

- GPA: 4 /4 (18.27 /20 , first rank)

- **Thesis**: Identification of novel response to treatment biomarkers in Locally Advanced Rectal Cancer (LARC) using machine learning.

Amirkabir University of Technology (Tehran Polytechnic) *September 2013 - September 2018*

- BS. in Electrical Engineering - Control Systems

- **Thesis**: Classifying sedimentary lithofacies of an oil field using well log data.

RESEARCH INTERESTS

System Identification and Modeling, Data Science and Machine Learning, Bioinformatics and Computational Biology, Cellular and Molecular Medicine, Pattern Recognition

RESEARCH AND ACADEMIC EXPERIENCES

Bu-Ali Sina University in collaboration with Hamadan University of Medical Sciences
September 2019 - 2021

Modeling and establishing a relationship to predict the effectiveness of Preoperative Chemo-Radiotherapy (PCRT) in Locally Advanced Rectal Cancer (LARC) patients based on expression levels of genes, using machine learning and dimensionality reduction methods.

Internship: *July 2017 - September 2017*
Amirkabir University of Technology
Semiconductors Laboratory:
Designing and implementing a temperature controller for a micro (portable) Polymerase Chain Reaction (PCR) device.

Teacher Assistant:

- Linear Control Systems *Fall 2019, Spring 2020, Fall 2020*
  Instructor: Dr. Ghaniee

- Micro Electronic Circuits II   *Spring 2020, Fall 2020, Spring 2021*

- Engineering Mathematics   *Fall 2020*
  Instructor: Dr. Hosseini

PROGRAMMING LANGUAGES AND SOFTWARE SKILLS

- **Languages:** Python, MATLAB, C++

- **Frameworks and Libraries:** Numpy, Pandas, Tensorflow, Scikit-Learn, Keras, PyTorch, FastAi, matplotlib, Seaborn, OpenCV, Deap

- **Software and Tools:** LaTeX, Microsoft Office

LANGUAGES

Proficient: Persian (Farsi), English
Intermediate: Arabic

CERTIFICATES

- **ACADEMIC IELTS:**
  total: 8
  reading: 8.5, listening: 8.5, speaking: 7, writing: 7

- **TOEFL IBT (expired):**
  total: 107
  reading: 29, listening: 30, speaking: 23, writing: 25

- **GRE:**
  quant: 161, verbal: 152, writing: 4

HONOURS AND AWARDS

- Ranked among top 0.25 percent in Iran national university entrance exam between 507 thousand participants (2013)

- Dissertation project was chosen as control group's **nominee** in faculty's top B.S. final projects fair. (January 2019).

NOTABLE PROJECTS

- Modeling and establishing a relationship to predict the effectiveness of Preoperative Chemo-Radiotherapy (PCRT) in Locally Advanced Rectal Cancer (LARC) patients based on expression levels of genes using machine learning.

- Designing an Electrocardiogram (ECG) circuit in Altium Designer software, printing the circuit board, assembling the elements and successfully recording the electrical activity of heart and displaying the results on oscilloscope.

- Finding stellar flares in Kepler data with ResNet-based CNNs. Four ResNet-based convolutional neural networks are trained to automatically identify flares of various heights in stellar flux time series. They can identify flares, their peak, starting and ending points.

- Investigation of convergence in function of proteins through evolution in similar surface shapes as described by Zernike-Canterakis shape descriptors (ZCDs). (Scientific Data Analysis Team first event on play with real data [certificate])

- Classifying sedimentary lithofacies of an oil field using well log data with different neural network architectures.

- Automatic image captioning using Beam Search.

- Abstractive text summarizing using transformer networks.

- Gender Classification on MRI (Gender classification on 3D IXI Brain MRI dataset with Keras and Tensorflow).

- chest X-ray pneumonia detection with Keras (Pneumonia detection with TensorFlow and Keras using transfer learning).

- Several data acquisition and control projects in instrumentation Lab. including temperature, ultrasonic, proximity, IR, light and pressure sensors, accelerometers and servo motors.

- Recognizing handwritten digits using neural networks. (Based on a multiclass classification method proposed in a 2016 article)

- Stock market prediction using different neural networks. (CNN and LSTM)

- Designing controller for a smart trolley. (Implemented in Arduino, Final project of automation course - M.S. course, taken in B.S.)

- Planning, validation and documentation of a fieldbus network for a given industrial unit's map. (based on Designmate plant automation software)

- Designing and controlling basic industrial processes, such as product counting and organization. (using FESTO laboratory equipment)

RELEVANT COURSES

Course	Grade /20
Neural Control Systems	20 (1st in class)
Optimal Control Systems	19 (1st in class)
Pattern Recognition	19.5 (1st in class)
Cosmology (I)	19.75 (1st in class)
Quantum Electronics (I)	18 (1st in class)

PUBLICATIONS

- **Title:** Identification of novel response to treatment biomarkers in Locally Advanced Rectal Cancer (LARC) with genetic algorithm-based gene selection.
  (submitted to *Molecular Diagnosis & Therapy*)

- **Title:** Predicting of uniaxial compressive strength of some igneous and metamorphic rocks by block punch index and cylindrical punch index tests.
  Jalali, S.H., Heidari, M., Zarrinshoja, M. and Mohseni, N.,
  International Journal of Rock Mechanics and Mining Sciences, 119, pp.72-80.

- **Title:** Characterization of carbonate reservoirs, a case study: the Sarvak Formation (Zagros basin, SW Iran).
  (submitted to *Petroleum Science*)

- **Title:** Finding stellar flares in Kepler data with ResNet based CNNs (writing initial draft).

- **Title:** A comparison of different neural network architectures trained for classifying sedimentary lithofacies of an oil field using well log data (writing initial draft).

REFERENCES

- **Dr. Majid Ghaniee Zarch** Assistant Professor
  Department of Electrical Engineering, Bu-Ali Sina University
  Email: m.ghaniee@basu.ac.ir

  Dr. Saeid Afshar Assistant Professor
  Department of Molecular Medicine and Human Genetics, Hamadan University of Medical Sciences
  Email: S.afshar@umsha.ac.ir
  Email: safshar.h@gmail.com

- **Dr. Ahmad Mehrabi** Associate Professor
  Department of Physics, Bu-Ali Sina University
  Email: mehrabi@basu.ac.ir

LINKS

- website

- github